AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application:

1. (Currently Amended) A medical prosthetic device or medical implant comprising ~~containing~~ a metal material ~~(A)~~ selected from the group consisting of titanium or an alloy thereof, zirconium or an alloy thereof, tantalum or an alloy thereof, hafnium or an alloy thereof, niobium or an alloy thereof and a chromium-vanadium alloy, wherein surface parts of the metal material ~~(A)~~ comprise ~~are coated with~~ a layer of a corresponding hydride material ~~(B)~~ selected from the group consisting of titanium hydride, zirconium hydride, tantalum hydride, hafnium hydride, niobium hydride, ~~and~~ chromium hydride, and ~~and/or~~ vanadium hydride, wherein the layer of hydride material comprises one or more ~~respectively, characterised in that the layer of hydride material (B) comprises one or more~~ biomolecule substances ~~(C) associated therewith~~.

2. (Currently Amended) A device or implant as claimed in claim 1 wherein the metal material ~~(A)~~ is titanium or an alloy thereof~~, preferably titanium~~.

3. (Currently Amended) A device or implant as claimed in claim 1 wherein the biomolecule substance ~~(C)~~ is selected from the group consisting of~~following types of substances~~: n~~N~~atural or recombinant bio-adhesives; natural or recombinant cell attachment factors; natural, recombinant or synthetic biopolymers; natural or recombinant blood proteins; natural or recombinant enzymes; natural or recombinant extracellular matrix proteins; natural or synthetic extracellular matrix biomolecules; natural or recombinant growth factors and hormones; natural, recombinant or synthetic peptide hormones; natural, recombinant or synthetic deoxyribonucleic acids; natural, recombinant or synthetic ribonucleic acids; natural or recombinant receptors; enzyme inhibitors; drugs; biologically active anions and cations; vitamins; adenosine monophosphate (AMP), adenosine diphosphate (ADP) or adenosine triphosphate (ATP); marker biomolecules; amino acids; fatty acids; nucleotides (RNA and DNA bases); and sugars.

4. (Currently Amended) A device or implant as claimed in claim 1 wherein~~where~~ the biomolecule substance ~~(C)~~ is present on the surface of the hydride material ~~(B)~~ or trapped in the hydride material.

5. (Currently Amended) A device or implant as claimed in claim 1 wherein ~~where~~ the layer of the hydride material comprises one or more ~~the~~ biomolecule substances ~~or substances (C) is/are associated with the hydride material (B)~~ in an amount of about ~~from~~ 1 picogram per mm^2 to 1 mg per mm^2~~, preferably from 0.1 nanogram to 100 microgram per mm^2~~.

6. (Currently Amended) A device or implant as claimed in claim 1 wherein ~~where~~ the layer of the hydride material comprising one or more biomolecule substances ~~or substances (C) is associated with surfaces that are~~ is in contact with bone or other tissue when the device is deployed in the body of a mammal.

7. (Currently Amended) A device or implant as claimed in claim 1 which replaces anatomy or restores a function of the body, wherein said anatomy or function of the body is selected from the group consisting of: ~~such as~~ ~~the~~ a femoral hip joint; ~~the~~ a femoral head; an acetabular cup; an elbow ~~including stems~~, ~~wedges, articular inserts~~; a knee~~, including the femoral and tibial components, stem, wedges, articular inserts or patellar components~~; a shoulder ~~including stem and head~~; a wrist; an ankle; a hand; a finger; a toe; a vertebrae; a spinal disc; a cochlea, ~~artificial joints; dental implants; ossiculoplastic implants; middle ear implants including incus, malleus, stapes, incus-stapes, malleus-incus, malleus-incus-stapes; cochlear implants; orthopaedic fixation devices such as nails, screws, staples and plates~~; and a heart valves~~; pacemakers; catheters; vessels; space filling implants; implants for retention of hearing aids; implants for external fixation; intrauterine devices (IUDs); and bioelectronic devices such as intracochlear or intracranial electronic devices~~.

8. (Currently Amended) A method for preparing a medical prosthetic device or implant ~~as defined in claim 1~~, ~~comprising~~ the method comprising (A) subjecting surface parts of ~~the~~ a metal material ~~(A)~~ to an electrolysis treatment to form ~~the~~ a layer of a corresponding hydride material selected from the group consisting of titanium hydride, zirconium hydride, tantalum hydride, hafnium hydride, niobium hydride, chromium hydride, and vandium hydride~~(B)~~, wherein said electrolysis treatment is ~~being~~ carried out in the presence of a ~~one or more~~ biomolecule substances, such that the biomolecule substance becomes associated with the hydride material

and (B) ~~(C)~~ forming a device or implant ~~containing~~ comprising ~~one or more biomolecule substances (C)~~ ~~in the layer of~~ the hydride material associated with the biomolecule substance.

9. (New) A device or implant as claimed in claim 2, wherein the metal material is titanium.

10. (New) A device or implant as claimed in claim 5, wherein the layer of the hydride material comprises one or more biomolecule substances in an amount of about 0.1 nanogram per mm^2 to 100 microgram per mm^2.

11. (New) A device or implant as claimed in claim 1, wherein said device or implant is selected from the group consisting of: an artificial joint, a dental implant, an ossiculoplastic implant, a middle ear implant, a cochlear implant, an orthopaedic fixation device, a pacemaker, a catheter, a space filling implant, an implant for retention of hearing aids, an implant for external fixation, an intrauterine device (IUD) and a bioelectric device.

12. (New) A device or implant as claimed in claim 7, wherein said elbow implant replaces a stem, wedge or articular insert.

13. (New) A device or implant as claimed in claim 7, wherein said knee implant replaces a femoral component, a tibial component, stem, wedge, an articular insert or a patellar component.

14. (New) A device or implant as claimed in claim 7, wherein said shoulder implant replaces a stem or head.

15. (New) A device or implant as claimed in claim 11, wherein said middle ear implant replaces an incus, a malleus, a stapes, an incus-stapes, a malleus-incus, or a malleus-incus-stapes.

16. (New) A device or implant as claimed in claim 11, wherein said orthopaedic fixation device is a nail, screw, staple or plate.

17. (New) A device or implant as claimed in claim 11, wherein said bioelectronic device is an intracochlear or intracranial electronic device.

18. (New) The method of claim 8, wherein said metal material is selected from the group consisting of titanium or an alloy thereof, zirconium or an alloy thereof, tantalum or an alloy thereof, hafnium or an alloy thereof, niobium or an alloy thereof and a chromium-vanadium alloy.

19. (New) A device or implant as claimed in claim 1, wherein the biomolecule substance is an ampholyte.

20. (New) The method of claim 8, wherein the biomolecule substance is an ampholyte.

21. (New) The method of claim 8, wherein the electrolysis treatment is carried out in the presence of an electrolyte.

22. (New) The method of claim 21, wherein said electrolyte is an aqueous salt solution, which further comprises the biomolecule substance.

23. (New) The method of claim 21, wherein said electrolyte has an ionic strength between about 0.01M and 10M.

24. (New) The method of claim 21, wherein said electrolyte has a temperature of between about 20°C and 100°C.

25. (New) The method of claim 24, wherein said electrolyte has a temperature of about 80 °C.

26. (New) The method of claim 21, wherein said electrolyte has a pH between about 0 and 10.

27. (New) The method of claim 26, wherein the pH of said electrolyte is between 2 and 5.

28. (New) The method of claim 26, wherein the pH of said electrolyte is adjusted to between 0 and 10 by adding a strong acid.

29. (New) The method of claim 22, wherein said electrolyte has a concentration of the biomolecule between about 1 picogram per mL and 50 milligrams per mL.

30. (New) The method of claim 8, wherein the electrolysis treatment is carried out in a two chambered electrolysis cell.

31. (New) The method of claim 30, wherein the electrolysis cell comprises a cathode compartment equipped with a cooled lid and a temperature regulated radiator shell.

32. (New) The method of claim 8, wherein the electrolysis treatment is carried out at a voltage of between about 0.1 and 1000 volts.

33. (New) The method of claim 32, wherein said voltage is below about 10 volts.

34. (New) The method of claim 8, wherein the electrolysis treatment is carried out at a current density between about 0.1 mA per cm^2 and 1 A per cm^2.

35. (New) The method of claim 34, wherein said current density is 1 mA per cm^2.

36. (New) The method of claim 8, wherein the electrolysis treatment is performed for between about 8 and 24 hours.

37. (New) The method of claim 8, wherein the electrolysis treatment is performed under aseptic or sterile conditions.

38. (New) The method of claim 8, wherein the method further comprises sterilization.

39. (New) The method of claim 8, wherein the method further comprises pretreating the metal material by electropolishing or sandblasting prior to the electrolysis treatment.

40. (New) The method of claim 28, wherein the strong acid comprises hydrochloric acid (HCl), hydrofluoric acid (HF) or sulfuric acid (H_2SO_4).